



## ComIn I5100

### AX3000 Industrial Grade 5G Wi-Fi 6 Wireless Router

- Industrial Casing, Anti-interference, External Antenna
- Gigabit Ethernet/serial Port Transparent Transmission
- Support DC Wide Voltage Power Supply Optional
- 3000Mbps Dual-band Wi-Fi 6
- Support Platform Management and Upgrade

## Product Description

ComIn I5100 is an industrial-grade 5G router with dual -band Wi-Fi 6 , suitable for outdoor areas that require wireless coverage, such as computer room monitoring , power monitoring , environmental monitoring , and outdoor areas. ComIn I5100 supports 2T2R 802.11ax, and the maximum concurrent connection rate of dual-band can reach 3000Mbps, which can build a stable and high-speed wireless network for users. ComIn I5100 has high-performance wireless indicators, can obtain a larger wireless coverage area and better wall penetration performance , and meets the application scenario requirements of high-density wireless terminals.

At the same time, ComIn I5100 also has good compatibility and supports the access of most wireless terminals on the market. Users can easily connect using mobile phones, tablets or laptops.

This product is suitable for different application scenarios, such as vehicle-mounted Wi-Fi , video transmission, PLC remote control, smart express cabinets, video surveillance , 5G coverage, etc.

## Main Features

### Wi-Fi 6 (802.11ax) Standard

- As the latest generation of IEEE 802.11 Wi-Fi standard, 802.11ax can improve user access capacity and bandwidth in high-density access scenarios, reduce service latency, and enhance user experience;
- Supports 2.4GHz and 5GHz dual-band UL/DL MU-MIMO, enabling AP to send data to multiple terminals at the same time, doubling the utilization of wireless spectrum resources;
- Supports 1024QAM modulation, and data transmission efficiency is increased by 40% compared to 802.11ac (256QAM);
- Support UL/DL OFDMA technology, using different subcarriers to transmit data to multiple terminals at the same time, reducing delay and improving network efficiency;
- Supports spatial multiplexing technology, and through the BSS coloring mechanism, APs and terminals can distinguish overlapping BSSs (basic service sets) to minimize co-channel interference;
- Supports the target wake time\* mechanism, allowing the AP and terminals to negotiate sleep and wake time, reducing conflicts and unnecessary wake-up times between terminals, saving terminal power and improving battery life.

## Uplink and Downlink Multi-user - multiple Input Multiple Output (MU-MIMO)

Supports MU-MIMO technology, supporting up to 4 spatial streams, 2.4GHz band supports 2 spatial streams, and 5GHz band supports 2 spatial streams. Through DL/UL MU-MIMO technology, AP can send data to multiple terminals at the same time, and the utilization rate of wireless spectrum resources is doubled, which increases the number of access users and bandwidth, and improves the user experience in high-density access scenarios.

## High-speed Access

It supports 160M bandwidth. The increase in bandwidth brings about an increase in available data subcarriers and expands the transmission channel. In addition, the use of 1024QAM modulation, MU-MIMO and other technologies makes the 5G single-band rate reach 2.4Gbps and the whole device rate reach 3Gbps.

## 5GHz Priority

The AP supports dual-band access of 2.4GHz and 5GHz at the same time. By controlling the terminal to access the 5GHz band first, dual-band terminal users in the 2.4GHz band are migrated to the 5GHz band, reducing the load and interference on the 2.4GHz band and improving the user experience.

## Industrial Application Design

- Wide input voltage design: 9 ~ 36V
- Industrial-grade software and hardware watchdog design, trouble-free and reliable operation in power stations, transportation, and industrial control environments
- Industrial-grade EMC electromagnetic compatibility and radiation performance, passed GB/T17626.5-2008 Level 4 test standard
- Industrial grade components, operating temperature: -30 ~ 60°C
- Industrial housing, suitable for extreme environments
- Adopt fanless cooling technology to effectively reduce the failure rate of equipment
- Meet the requirements for trouble-free and reliable operation in vibration and impact environments

## Stable and Reliable

- Adopt a complete anti-dropout mechanism to ensure that the data terminal is always online
- The whole machine passes the EMC test requirements
- Ethernet interface has built-in 1.5KV electromagnetic isolation protection, GB/T17626.5-2008 level 4
- SIM/UIM interface has built-in 15KV ESD protection, GB/T17626.5-2008 level 4
- The power interface has built-in reverse phase protection and overvoltage protection

## Mobile Network

- Backward compatible with 4G Cat18 (uplink) & Cat20 (downlink) or Cat12 (uplink) & Cat13 (downlink)
- Support lock Band, lock base station
- Support PIN code lock card
- Supports locked network mode
- Dual SIM card design, dual card single standby single pass

## Product Specifications

Product Model	I5100
Overall Dimensions	188*137*44(mm)
Weight	723g
Installation	Ear-mounted or rail-mounted installation
Indicator Lights	<ul style="list-style-type: none"> <li>1 x PWR</li> <li>1 x SYS</li> <li>1 x 2.4G Wi-Fi</li> <li>1 x 5.8G Wi-Fi</li> <li>1 x SIM1</li> <li>1 x SIM2</li> <li>3 x SIM1 Signal</li> <li>3 x SIM2 Signal</li> <li>1 x WAN</li> <li>4 x LAN</li> </ul>
Interface	<ul style="list-style-type: none"> <li>5 x 1GbE RJ45 (1WAN, 4LAN)</li> <li>2 x Wi-Fi RF interface</li> <li>4 x Cellular RF interface</li> <li>1 x Drawer-type dual Nano SIM card holder</li> <li>1 x 5 PIN 3.5mm phoenix terminal (RS232 or RS485)</li> <li>1 x 2 PIN 3.5mm phoenix terminal (DC Input)</li> <li>1 x DC interface</li> <li>1 x TF Card</li> <li>1 x Reset button</li> </ul>
Input Voltage	9V~36V Recommended input 12V1.5A
Power Consumption	12W (full load)
<b>Environmental Indicators</b>	
Ambient Temperature	<ul style="list-style-type: none"> <li>Working temperature: -30°C ~ + 60 °C</li> <li>Storage temperature: -40°C ~ +85°C</li> </ul>
Relative Humidity of Working Environment	5% ~ 95% (non-condensing)
Air Pressure	86kPa ~ 106kPa Altitude
Certification	Can cooperate to complete other certifications according to customer requirements

Main Chip Solution										
CPU	MTK MT7981BA+MT7976CN+MT7531AE									
Flash	32 MB SPI Flash									
DDR	256MB DDR3L memory									
Wi-Fi Features										
Working Frequency Band	2.4GHz radio:2.412GHz~2.472GHz									
	5GHz radio: 5.180~5.825 GHz									
Maximum Output Power(Single port)	2.4GHz radio: 21± 2dBm@MCS0									
	5GHz radio: 21±2 dBm@MCS0									
Supported Rate	2.4G Radio: 802.11b: 1, 2, 5.5, and 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, and 54Mbps 802.11n HT20/HT40: MCS0~MCS15 (400/ 800ns GI) 802.11ax HE20/HE40: MCS0 ~ MCS11 (400/ 800ns GI)									
	5G Radio: 802.11a: 6, 9, 12, 18, 24, 36, 48 and 54Mb/s 802.11n HT20/ HT40: MCS0~MCS15 (400/ 800ns GI) 802.11ac VHT20/VHT40/VHT80: MCS0 ~ MCS9 (400/ 800ns GI) 802.11ax HT20/HE40/HE80/HE160: MCS0 ~ MCS11 (400/ 800ns GI)									
Receiving Sensitivity	802.11g: -92dBm@6Mbps -76dBm@54Mbps									
	802.11n:									
	<table border="1"> <thead> <tr> <th></th> <th>HT20</th> <th>HT40</th> </tr> </thead> <tbody> <tr> <td>MCS0/8/16</td> <td>- 89 dBm</td> <td>- 87 dBm</td> </tr> <tr> <td>MCS7/15</td> <td>- 73 dBm</td> <td>- 71 dBm</td> </tr> </tbody> </table>		HT20	HT40	MCS0/8/16	- 89 dBm	- 87 dBm	MCS7/15	- 73 dBm	- 71 dBm
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802.11a: -92dBm@6Mbps -76dBm@54Mbps										

802.11ac:			
	VHT20	VHT40	VHT80
MCS0	- 90 dBm	-87dBm	-84dBm
MCS8	- 70 dBm	-68 dBm	-59 dBm

### 5G Wireless Parameters

Wireless Technology	Access	5G: 3GPP Release 15 NSA/SA operation, Sub-6 GHz CN LTE: Downlink Cat 12, Uplink Cat 13 GL&EU: Downlink Cat 16, Uplink Cat 18		
Frequency Band Support		<b>CN</b>	<b>EU</b>	<b>GL (Global)</b>
		<b>NSA:</b> n41/n78/n79  <b>SA:</b> n1/n28/n41/n77/n78/n79  <b>LTE-FDD:</b> B1/B2/B3/B5/B7/B8/B20/B28  <b>LTE-TDD:</b> B34/B38/B39/B40/B41  <b>WCDMA:</b> B1/B2/B5/B8	<b>NSA:</b> n1/n3/n5/n7/n8/n20/n28/n38/n40/n41/n71/n75/n76/n77/n78  <b>SA:</b> n1/n3/n5/n7/n8/n20/n28/n38/n40/n41/n71/n75/n76/n77/n78  <b>LTE-FDD:</b> B1/B3/B5/B7/B8/B20/B28/ B32/B71  <b>LTE-TDD:</b> B38/B40/B41/B42/B43  <b>WCDMA:</b> B1/B5/B8	<b>5G NR (NSA):</b> n1/2/3/5/7/8/12/13/14/18/20/25/26/28/29/30/38/40/41/48/66/70/71/75/76/77/78/79  <b>5G NR (SA):</b> n1/2/3/5/7/8/12/13/14/18/20/25/26/28/29/30/38/40/41/48/66/70/71/75/76/77/78/79  <b>LTE-FDD:</b> B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29/30/32/66/71  <b>LTE-TDD:</b> B34/38/39/40/41/42/43/48  <b>LAA: B46</b>  <b>WCDMA:</b> B1/2/4/5/8/19

<p>Uplink and Downlink Peak Rates</p>	<p><b>5G NSA Sub-6:</b> Max 2.2Gbps(DL)/ Max 575Mbps(UL) <b>5G SA Sub-6:</b> Max 2Gbps(DL)/ Max 1Gbps(UL) <b>LTE:</b> Max 600Mbps(DL)/ Max 150Mbps(UL) <b>WCDMA:</b> Max 42Mbps(DL)/ Max 11Mbps(UL)</p>	<p><b>5G NSA Sub-6:</b> Max 3.4Gbps(DL)/ Max 550Mbps(UL) <b>5G SA Sub-6:</b> Max 2.4Gbps(DL)/ Max 900Mbps(UL) <b>LTE:</b> Max 1.6Gbps(DL)/ Max 200Mbps(UL) <b>WCDMA:</b> Max 42Mbps(DL)/ Max 5.76Mbps(UL)</p>
<p>Antenna Type</p>	<p>External antenna</p>	

### Product View



### Ordering Information

Product Model	Product Packaging
ComIn I5100	Product complete machine, 12V1.5A power adapter , 2.4&5.8 dual-band Wi-Fi antennas * 2 , 5G antennas * 4 , installation accessories, network cable

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